

IN THE CLAIMS

1. (currently amended) A method for conducting a perfusion study, said method comprising:

performing an initial full computed tomography scan of an area of interest in an object; and

performing at least one subsequent partial computed tomography scan of the area of interest to detect motion of a contrast agent.

2. (original) A method in accordance with Claim 1 wherein said performing at least one subsequent partial scan comprises:

performing a first full rotation including n sub-rotations, where no scanning is performed for all sub-rotations except an ith sub-rotation in which a scan is performed; and

performing a second full rotation including m sub-rotations where no scanning is performed for all sub-rotations except a jth sub-rotation in which a scan is performed.

3. (original) A method in accordance with Claim 2 wherein said performing a second full rotation comprises performing a second full rotation including m sub-rotations where no scanning is performed for all sub-rotations except a jth sub-rotation in which a scan is performed wherein $m = n$, and $j = i$.

4. (original) A method in accordance with Claim 2 wherein said performing a second full rotation comprises performing a second full rotation including m sub-rotations where no scanning is performed for all sub-rotations except a jth sub-rotation in which a scan is performed wherein $m = n$, and $j \neq i$.

5. (original) A method in accordance with Claim 2 wherein said performing a second full rotation comprises performing a second full rotation including m sub-rotations where no scanning is performed for all sub-rotations except a jth sub-rotation in which a scan is performed wherein $m \neq n$, and $j = i$.

6. (original) A method in accordance with Claim 2 wherein said performing a second full rotation comprises performing a second full rotation including m sub-rotations

where no scanning is performed for all sub-rotations except a j th sub-rotation in which a scan is performed wherein $m \neq n$, and $j \neq i$.

7. (original) A method in accordance with Claim 2 further comprising:

collecting projection data from the partial scans;

forming a partial projection dataset from the collected projection data;

interpolating the partial projection data to estimate a complete projection dataset from the partial dataset; and

reconstructing images from the estimated complete projection dataset.

8. (original) A method in accordance with Claim 1 wherein said performing at least one subsequent partial scan comprises:

performing a first full rotation including n view-indexes, where no scanning is performed for all view-indexes except every i th view-index beginning with a view-index q in which a scan is performed; and

performing a second full rotation including m view-indexes where no scanning is performed for all view-indexes except every j th view-index beginning with a view-index r in which a scan is performed.

9. (original) A method in accordance with Claim 8 wherein said performing a second full rotation comprises performing a second full rotation including m view-indexes where no scanning is performed for all view-indexes except every j th view-index beginning with a view-index r in which a scan is performed, wherein $r = q$.

10. (original) A method in accordance with Claim 8 wherein said performing a second full rotation comprises performing a second full rotation including m view-indexes where no scanning is performed for all view-indexes except every j th view-index beginning with a view-index r in which a scan is performed, wherein $r \neq q$.

11. (original) A method in accordance with Claim 8 further comprising:

collecting projection data from the partial scans;

reconstructing at least two images from the collected projection data;
extrapolating an initial guess image based on the at least two images; and
constructing subsequent images based on the extrapolated initial guess image.

12. (currently amended) A Computed Tomography (CT) System comprising:

~~a radiation~~ an x-ray radiation source;

~~a radiation~~ an x-ray radiation detector; and

a computer coupled to said radiation source and said radiation detector, said computer configured to:

perform an initial full computed tomography scan of an area of interest in an object; and

perform at least one subsequent partial computed tomography scan of the area of interest to detect motion of a contrast agent.

13. (original) A system in accordance with Claim 12, wherein said computer further configured to:

perform a first full rotation including n sub-rotations, where no scanning is performed for all sub-rotations except an i th sub-rotation in which a scan is performed; and

perform a second full rotation including m sub-rotations where no scanning is performed for all sub-rotations except a j th sub-rotation in which a scan is performed.

14. (original) A system in accordance with Claim 13 wherein $m = n$ and $j = i$.

15. (original) A system in accordance with Claim 13 wherein $m = n$ and $j \neq i$.

16. (original) A system in accordance with Claim 13 wherein $m \neq n$ and $j = i$.

17. (original) A system in accordance with Claim 13 wherein $m \neq n$ and $j \neq i$.

18. (original) A system in accordance with Claim 12, wherein said computer configured to perform at least one subsequent partial scan comprises a computer configured to:

perform a first full rotation including n view-indexes, where no scanning is performed for all view-indexes except every i th view-index beginning with a view-index q in which a scan is performed; and

perform a second full rotation including m view-indexes where no scanning is performed for all view-indexes except every j th view-index beginning with a view-index r in which a scan is performed.

19. (original) A system in accordance with Claim 18 wherein $r = q$.

20. (original) A system in accordance with Claim 18 wherein $r \neq q$.

21. (currently amended) A computer readable medium encoded with a program configured to :

perform an initial full computed tomography scan of an area of interest in an object;
and

perform at least one subsequent partial computed tomography scan of the area of interest to detect motion of a contrast agent.

22. (original) A computer readable medium in accordance with Claim 21 wherein said program further configured to instruct the computer to:

perform a first full rotation including n sub-rotations, where no scanning is performed for all sub-rotations except an i th sub-rotation in which a scan is performed; and

perform a second full rotation including m sub-rotations where no scanning is performed for all sub-rotations except a j th sub-rotation in which a scan is performed.

23. (original) A computer readable medium in accordance with Claim 21 wherein said program further configured to instruct the computer to:

perform a first full rotation including n view-indexes, where no scanning is performed for all view-indexes except every i th view-index beginning with a view-index q in which a scan is performed; and

perform a second full rotation including m view-indexes where no scanning is performed for all view-indexes except every j th view-index beginning with a view-index r in which a scan is performed.